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(11) EP 0 820 146 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
28.07.1999 Bulletin 1999/30

(43) Date of publication A2:  
21.01.1998 Bulletin 1998/04

(21) Application number: 97111053.1

(22) Date of filing: 02.07.1997

(51) Int. Cl.<sup>6</sup>: H03K 3/356, H03K 3/0231,  
H03L 7/099, H03K 5/13,  
H03K 3/013

(84) Designated Contracting States:  
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC  
NL PT SE

(30) Priority: 16.07.1996 US 682025

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### (54) Differential delay element to prevent common mode oscillation and input hysteresis

(57) A system for providing a differential delay element which optimize the prevention of both common mode oscillation and input hysteresis. The system includes a first voltage supply terminal, a second voltage supply terminal and a current-regulating voltage terminal. The system further includes a current-control MOS transistor having its source connected to the first voltage supply terminal and its gate connected to the current-regulating voltage terminal. A pair of inverters are connected to the current-control MOS transistor. Each inverter has an input MOS transistor with its source connected to the drain of the current-control transistor and its gate forming a respective input terminal, and a load MOS transistor with its drain coupled to the drain of the input transistor and forming an output terminal, and its source connected to the second voltage supply terminal. The system still further includes a pair of cross-coupling means to prevent common mode oscillation, each connecting the gate of the load transistor of a respective inverter and the output terminal of the other inverter to form a positive feedback. A pair of MOS diodes are coupled to the load transistors to prevent input hysteresis characteristics. Each diode is coupled between the drain and the source of a respective load

transistor. To prevent both common mode oscillation and input hysteresis, the channel sizes of the diodes substantially equal the channel sizes of the load transistors.

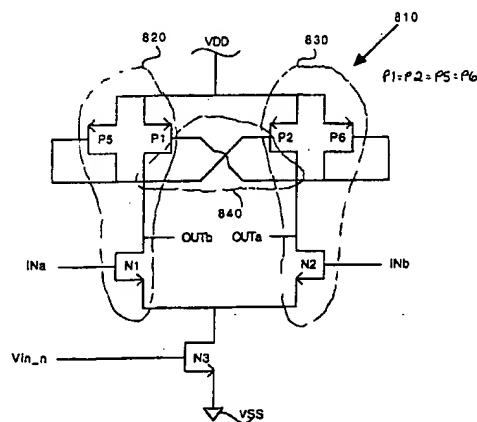


FIG. 8A

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## EUROPEAN SEARCH REPORT

Application Number

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			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H03K H03L
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>8 June 1999</b>	Examiner <b>Segaert, P</b>
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons ..... &: member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

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